

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	(rhodopsin or bacteriorhodopsin or proteorhodopsin) same ((resin or talon) near5 column)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 13:58
L2	652	(rhodopsin or bacteriorhodopsin or proteorhodopsin) and ((resin or talon) near5 column)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:48
L3	5990174	(sds or dodecylsulfate) near5 (page or polyacrylamide)r	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:47
L4	64913	(sds or dodecylsulfate) near5 (page or polyacrylamide)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:04
L5	749	I4 same (spectrum or spectral)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:54
L6	124	I4 same ((absorption or visible) with (spectrum or spectral))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:50
L7	3944	(rhodopsin or bacteriorhodopsin or proteorhodopsin)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:49
L8	2	I6 and I7	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:49
L9	142	I4 with (spectrum or spectral)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:49

## EAST Search History

L10	35	l6 and l9	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:50
L11	30	l10 and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:54
L12	56	l4 same ((spectrum or spectral) near8 detect\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:58
L13	42	l12 and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:03
L14	94	l4 same ((absorption) near8 detect\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 14:58
L15	60	l14 and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:06
L16	37	l15 not l13	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:03
L17	65793	(sds or dodecylsulfate) with (page or polyacrylamide)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:05
L18	2313	l17 same (vis or visible)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:05
L19	89	l17 same ((vis or visible) near8 detect\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:11

## EAST Search History

L20	57	I19 and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:13
L21	1936	(I17 or "gel electrophoresis") same (spectroscopic\$6 or spectrophotometr\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:13
L22	6361	(vis or visible) same (spectroscopic\$6 or spectrophotometr\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:13
L23	163	I21 and I22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:13
L24	103	I23 and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:14
L25	3254	(I17 or "gel electrophoresis") same (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:14
L26	146766	(vis or visible or absorption) same (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:15
L27	3753	(I17 or "gel electrophoresis") same (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:15
L28	558	(I26 and I27) and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:15
L29	117667	(vis or visible or absorption) near8 (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:16

## EAST Search History

L30	449	(I29 and I27) and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:17
L31	1252	(I17 or "gel electrophoresis") with (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:15
L32	16190	((vis or visible or absorption) near8 (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)) with (detect\$6 or determin\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:16
L33	31386	((vis or visible or absorption) near8 (spectroscopic\$6 or spectrophotometr\$6 or spectral or spectrum or spectra)) with (detect\$6 or determin\$6 or record\$6 or measur\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:16
L34	221	(I33 and I27) and @ad<"20021126"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/12 15:17

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L1: Entry 1 of 1

File: DWPI

Mar 31, 2004

DERWENT-ACC-NO: 2000-628382

DERWENT-WEEK: 200610

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TITLE: Method for authentication, e.g. of banknote, check, security, work of art or clothing, uses photochromic ink containing bacteriorhodopsin variant giving low-level visual and high-level security

INVENTOR: HAMPP, N ; SEITZ, A

PATENT-ASSIGNEE:

ASSIGNEE

CODE

HAMPP N

HAMPI

PRIORITY-DATA: 1999DE-1014702 (March 31, 1999)

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## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<input type="checkbox"/> <a href="#">CN 1143781 C</a>	March 31, 2004		000	B41M003/14
<input type="checkbox"/> <a href="#">WO 200059731 A1</a>	October 12, 2000	G	049	B41M003/14
<input type="checkbox"/> <a href="#">AU 200038171 A</a>	October 23, 2000		000	B41M003/14
<input type="checkbox"/> <a href="#">EP 1171309 A1</a>	January 16, 2002	G	000	B41M003/14
<input type="checkbox"/> <a href="#">CN 1347371 A</a>	May 1, 2002		000	B41M003/14
<input type="checkbox"/> <a href="#">HU 200200446 A2</a>	June 28, 2002		000	B41M003/14
<input type="checkbox"/> <a href="#">JP 2002540988 W</a>	December 3, 2002		037	B41M003/14
<input type="checkbox"/> <a href="#">AU 758715 B</a>	March 27, 2003		000	B41M003/14
<input type="checkbox"/> <a href="#">EP 1171309 B1</a>	May 2, 2003	G	000	B41M003/14
<input type="checkbox"/> <a href="#">DE 50001979 G</a>	June 5, 2003		000	B41M003/14
<input type="checkbox"/> <a href="#">US 6616964 B1</a>	September 9, 2003		000	B44F001/08
<input type="checkbox"/> <a href="#">ES 2199155 T3</a>	February 16, 2004		000	B41M003/14
<input type="checkbox"/> <a href="#">RU 2240923 C2</a>	November 27, 2004		000	B41M003/14
<input type="checkbox"/> <a href="#">IL 145542 A</a>	May 17, 2005		000	B41M003/14

DESIGNATED-STATES: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV  
MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ

VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT  
 SD SE SL SZ TZ UG ZW AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL  
 PT RO SE SI AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
CN 1143781C	March 31, 2000	2000CN-0805663	
WO 200059731A1	March 31, 2000	2000WO-EP02905	
AU 200038171A	March 31, 2000	2000AU-0038171	
AU 200038171A		WO 200059731	Based on
EP 1171309A1	March 31, 2000	2000EP-0917031	
EP 1171309A1	March 31, 2000	2000WO-EP02905	
EP 1171309A1		WO 200059731	Based on
CN 1347371A	March 31, 2000	2000CN-0805663	
HU 200200446A2	March 31, 2000	2000WO-EP02905	
HU 200200446A2	March 31, 2000	2002HU-0000446	
HU 200200446A2		WO 200059731	Based on
JP2002540988W	March 31, 2000	2000JP-0609269	
JP2002540988W	March 31, 2000	2000WO-EP02905	
JP2002540988W		WO 200059731	Based on
AU 758715B	March 31, 2000	2000AU-0038171	
AU 758715B		AU 200038171	Previous Publ.
AU 758715B		WO 200059731	Based on
EP 1171309B1	March 31, 2000	2000EP-0917031	
EP 1171309B1	March 31, 2000	2000WO-EP02905	
EP 1171309B1		WO 200059731	Based on
DE 50001979G	March 31, 2000	2000DE-0501979	
DE 50001979G	March 31, 2000	2000EP-0917031	
DE 50001979G	March 31, 2000	2000WO-EP02905	
DE 50001979G		EP 1171309	Based on
DE 50001979G		WO 200059731	Based on
US 6616964B1	March 31, 2000	2000WO-EP02905	
US 6616964B1	January 8, 2002	2002US-0937963	
US 6616964B1		WO 200059731	Based on
ES 2199155T3	March 31, 2000	2000EP-0917031	
ES 2199155T3		EP 1171309	Based on
RU 2240923C2	March 31, 2000	2000WO-EP02905	
RU 2240923C2	March 31, 2000	2001RU-0129295	
RU 2240923C2		WO 200059731	Based on
IL 145542A	March 31, 2000	2000IL-0145542	
IL 145542A		WO 200059731	Based on

INT-CL (IPC): B41M 3/14; B42D 15/00; B42D 15/10; B44F 1/08; B44F 1/12; C09D 11/00;  
 C09D 11/04; C09F 3/00; C09K 9/02; C09K 11/06; G03G 21/04; G07D 7/00; G07D 7/12;  
 G09F 3/00

RELATED-ACC-NO: 2000-647231

ABSTRACTED-PUB-NO: WO 200059731A

BASIC-ABSTRACT:

NOVELTY - Method for authentication of an article comprises applying a photochromic ink containing bacteriorhodopsin (BR) variant(s) as photochromic fraction, which, when exposed to visible light, undergoes a visually detectable, reversible change of state useful as low-level security characteristic and also has high-level security characteristic(s) that can be detected only by instrumental analysis and not visually.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for (a) photochromic inks containing BR variant(s); (b) articles marked by the cited process; (c) a method of authentication using a photochromic ink containing wild-type BR useful as low-level security characteristic as above, and also an ancillary that binds water or/and reduced proton availability.

USE - The method is used for authentication of articles (claimed), e.g. banknotes, checks, securities, works of art and clothing, and to counteract copying.

ADVANTAGE - The method provides both low-level, visual and high-level security features.

DESCRIPTION OF DRAWING(S) - The drawing shows the authentication procedure described in the example.

Document 1

Mark 2

Green or yellow light from photodiode 3

Irradiated area 4

Blue light from photodiode 5

CHOSEN-DRAWING: Dwg.1/2

TITLE-TERMS: METHOD AUTHENTICITY BANKNOTE CHECK SECURE WORK ART CLOTHING  
PHOTOCHROMIC INK CONTAIN VARIANT LOW LEVEL VISUAL HIGH LEVEL SECURE

DERWENT-CLASS: G04 P75 P76 P78 P84 P85 T05

CPI-CODES: G04-A;

EPI-CODES: T05-J;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-188331

Non-CPI Secondary Accession Numbers: N2000-465562

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